

esis in several species of *Stenobothrus* that the chromosomes of the spermatocytes are made up of rods, sometimes 2 and sometimes 4. The length of these rods varies in arithmetic progression. In each of 4 species studied there are 5 short chromosomes, no two of which are the same length; altho the 5 short chromosomes in one species correspond with the 5 short ones of the others. There are also 3 larger chromosomes in each species, but these long chromosomes do not belong in the different species to the same numerical series. The author believes that the external specific differences between the species are dependent on the differences in the long chromosomes, altho he is unable to establish the correlation between the rod-lengths and the body characteristics.

SPERMATOGENESIS IN HYBRID PIGEONS

Smith (*Quart. J. Mic. Sci.* 1912, p. 159) reports studies of the sperm formation and structure in the hybrids formed by mating a male pigeon and female domestic dove, and compares these with the condition in pure breeds.

In the first maturation division in the hybrids the chromosomes do not unite to form 8 bivalent chromosomes but occur quite irregularly about the spindle and are finally distributed to the poles irregularly.

The second maturation division is practically suppressed. The secondary spermatocytes proceed at once to form spermatids and spermatozoa. Many of these are on the average twice the normal size, altho otherwise apparently normal structurally. In other cases there were structural abnormalities.

It is known experimentally that hybrids of these stocks are infertile, and it seems that the sterility may be due to the inability of the specifically different chromosomes to unite in the normal synapse, with the consequent disturbance in the whole maturation process.

MALE GERM CELLS IN NOTONECTA

Browne (*Jour. Exp. Zool.* Jan. 1913) discusses the differences in form and number of the chromosomes in three species of *Notonecta*. She finds that the differences in the chromosome condition may be explained in these species by the relations of two particular